

Table 1-1 Estimated Wastestream Chemical and Physical Characteristics

PARAMETER	UNITS	READING
pH		7.24
Resistivity	ohm-meter	0.046
Temperature	°F	70
ANIONS		
Chlorides	mg/L	193,000
Sulfates	mg/L	2,989
Sulfides	mg/L	ND < 1
Carbonates	mg/L	ND < 10
Bicarbonates	mg/L	150
CATIONS		
Sodium	mg/L	112,500
Calcium	mg/L	1,940
Magnesium	mg/L	199
Barium	mg/L	ND < 1
Iron (total)	mg/L	ND < 1

1.5 EXTERNAL TRANSPORT AND DISPOSAL PROCEDURES

Buckeye does not anticipate any wastewater leaving the property. Wastewater will be disposed of in the injection wells or the brine pond. In the event of well failure, wastewater will be diverted from the cavern well, via pipeline, to an alternate on-site injection well or the onsite brine pond. If, for some reason, the alternate locations are unavailable for disposal, the facility will discontinue fresh water injection into the caverns to stop the generation of waste until the injection well is repaired or the brine pond is available.

1.6 PROJECT RESPONSIBILITY

Buckeye's Terminal Manager will have the primary responsibility to ensure all WAP conditions are met. The Terminal Manager and Environmental Engineer are responsible for coordination and selection of the subcontracted laboratory used to support the analyses associated with this WAP.

A Michigan Department of Environmental Quality qualified laboratory will be performing the analytical requirements of the WAP. It is the primary responsibility of the laboratory to ensure that all of the laboratory quality assurance (QA) functions are fulfilled.

2 SAMPLING ACTIVITIES

The following parameters will be analyzed for one or more of the following reasons:

- required to show that the waste is characteristically non-hazardous per 40 CFR 261
- required per the EPA Region 5 guidance document
- required for optimal injection well system performance

2.1 SAMPLING PARAMETERS

Table 2-1 summarizes the proposed sampling parameters, analytical methods, and sampling frequency. For quality control purposes, field duplicate samples will be collected, at a minimum annually, in an effort to document the effectiveness of the sample techniques and the analytical system. Four hazardous characteristics: (1) corrosivity, (2) reactivity, (3) ignitability, and (4) toxicity will be tested on a monthly basis to demonstrate that no characteristically hazardous waste is present in the wastestream.

Table 2-1 Sampling Parameters for Buckeye Woodhaven Terminal Injection System

PARAMETER	METHOD	SAMPLING FREQUENCY
pH	EPA 150.1	Daily
Eh	EPA 120.1	Daily
Specific Conductance		Daily
Specific Gravity		Daily
Temperature		Daily
Total Dissolved Solids (TDS)	EPA 160.1	Monthly
Total Organic Carbon (TOC)	SW846-9060	Monthly
Cations		Monthly
Sodium	EPA 273.1	
Potassium	EPA 258.1	
Calcium	215.1	Monthly
Magnesium	EPA 242.2	Monthly
Barium	EPA 208.1	Monthly
Iron (total)	EPA 236.1	Monthly
Anions		Monthly
Chlorides	SM4500B	
Sulfates	EPA 375.4	
Carbonates	EPA 310.1	
Bicarbonates	EPA 310.1	
Sulfides	EPA 376.2	

2.2 SAMPLING FREQUENCY JUSTIFICATION

The sampling frequency presented in this WAP was based on process knowledge of the operational conditions and anticipated waste stream. As the waste stream is non-hazardous, the sampling frequency proposed is a reasonable monitor of the waste stream. The frequency specified will provide the necessary monitoring to insure identification of any potential fluctuations in the stream. Additionally, this WAP allows for supplemental, or modified, sampling when system anomalies are suspected.

2.3 SAMPLING LOCATION

Buckeye has identified a primary sampling location from which wastewater injectate will be collected. The primary sampling point, a manual spigot proposed to be located at the discharge point of the final filtration unit, will be used for specified sampling events. This spigot will be located on the wastewater main discharge line, such that no other piping is connected to the main prior to the wellhead.

2.4 SAMPLING PROTOCOL

The sampling protocols include the collection of operational data at the wellhead and the collection of samples at the appropriate sample points.

2.4.1 SAMPLING PROTOCOL (ANALYTICAL)

The sample will be obtained at the primary sample point by carefully opening the spigot valve to allow the sample to flush to the local sump drain for one minute. After the flush period, appropriate sample containers will be filled with the final filtered wastewater (annually, a second set of containers will be filled as a field duplicate).

Each sample container will be labeled with the:

- sample ID (Example: BDW-1 or post-treatment discharge)
- date of collection
- time of collection
- bottle sequence (example: 1 of 3)
- sampler initials

A Chain-of-Custody (COC) will be initiated that includes:

- sample ID (injection well)
- date of collection
- time of collection
- analyses to be performed
- pertinent sampling notes
- sampler signature

2.5 SAMPLING PERSONNEL

Only those individuals who are thoroughly familiar with the safety and operational characteristics of the injection well system and the requirements of this document will perform or assist in sampling. The sampling staff will possess site familiar training in the proper sampling protocols specified in this WAP. Additionally, they will possess site knowledge to perform the sampling tasks safely. Personnel will be primarily responsible for the operation, maintenance and corrective action documentation of the injection well system.

Sampling personnel will be primarily responsible for coordinating sampling activities with the lab, performing sampling as outlined in Section 2.4, preparing and completing all required sample labels and COC, and securing transportation of samples to the laboratory for analysis.

2.6 CHAIN-OF-CUSTODY

The following COC procedures have been developed to insure that all samples collected remain intact and representative, until all analytical procedures are conducted. These procedures include both field and laboratory custody requirements.

2.6.1 FIELD CUSTODY PROCEDURES

Sample containers are labeled as indicated in Section 2.4 immediately after collection. A COC is initiated in the field at the time of collection. After signature, the COC induplicate form is removed and retained by Buckeye terminal personnel. The samples and COC are sent by the field sampling technician to the chosen laboratory.

Upon receipt of the sample at the laboratory, the COC is signed as received by the sample custodian, the sample information is recorded in a computer log and the sample is released to the laboratory for testing.

2.6.2 LABORATORY CUSTODY PROCEDURES

The chosen laboratory will utilize strict procedures for sample custody. The QA/QC document in Appendix A illustrates sample guidelines. These guidelines are established to maintain the custody of samples in the laboratory and the legal validity of results generated. The sample custody procedure outlines the general procedures utilized in the processing of all samples received. The following is to be considered a minimum requirement. Once a qualified laboratory is chosen, specific details covering sample receipt, login, storage, internal sample transfer, storage, analysis, and disposal will be provided.

2.6.3 SAMPLE CUSTODY PROCEDURE

This procedure is designed to outline the general processes used to initiate and maintain sample custody for samples received at the laboratory. These procedures have been instituted to insure that proper sample custody has been established upon receipt and that this custody is maintained during the entire analytical process.

GENERAL PROCEDURE:

When a sample cooler is received, a sample login is immediately initiated. The cooler is inspected externally to determine if any obvious leakage has occurred. The cooler seals are broken and the COC is removed. The cooler contents are inspected for obvious damage or leaks. A thermometer is used to measure the temperature of the samples, and the receipt temperature is recorded on the COC. Upon completion of inspection, the COC is checked against the bottles received. The COC is reviewed and signed.

All samples received at the laboratory are logged into a computerized laboratory data management system, which assigns a unique laboratory sample number to each sample. Each container for a given sample is issued a unique container identification number.

Login personnel determine which analysis is required for a given sample from the information provided on the COC. The COC information is entered into the laboratory data management system.

The sample COC, check list, and any other shipping paperwork are placed into a project file, which is then given to the applicable laboratory project manager who verifies the receipt of the sample, COC information, and analyses logged into the database system.

Labels are generated for each sample container. These labels are durable, water resistant, and printed with indelible ink. The labels include the following information:

- sample number
- client name
- client sample ID
- date received
- date collected
- preservative
- required tests from that container

The sample number serves as the container identification number. Where multiple containers are received for a given container type, they are further identified with a container identification in the format of (1 of 3). This sample number and container number format provides a link between sample analysis and the container used.

Samples are placed in a cooler (maintained at approximately 4°C). Access to the cooler and samples are limited to the technical staff of the laboratory. Sample security is maintained through secured limited access areas.

2.7 BOTTLES AND PRESERVATIVES

All samples will be collected in appropriate laboratory supplied sample containers. Depending on the analysis involved, chemical preservatives may or may not be necessary. Samples will be transported on ice and stored refrigerated at 4 +/- 2 deg C.

2.8 SAMPLE TRANSPORT

All samples will be packaged in a cooler with sufficient ice and packing material. Caution will be taken during handling and transport of the samples to ensure that the sample containers are not damaged.

3 ANALYSIS INFORMATION

3.1 ANALYTICAL PROCEDURES

Analytical methods are listed in Section 2.1 of the WAP. It is understood that these are the base parameters, and circumstances may necessitate the need for additional testing. Detailed aspects of the analytical parameters, including typical lower quantitation limits, analytical method references, units of reporting, and holding times will be provided once a qualified laboratory is selected.

3.2 PARAMETER AND QUANTITATION LIMIT JUSTIFICATION

The parameters selected for analysis under the WAP are representative of those necessary to monitor and characterize the wastestream. These parameters are analyzed to determine compliance with the UIC permit, and to insure that the waste stream characteristics are consistent.

The parameters selected for analysis under this WAP are consistent with the requirements of the UIC permit. The provision for waste recharacterization, provided in this WAP, eliminates the need for additional routine analysis.

The quantitation limits reflect realistic levels of detection that can be reasonably reproduced to insure permit compliance, and to allow for the obvious effects of the sample matrix. These limits should be achievable for the analysis indicated, however, when not obtainable, adequate documentation for matrix interference will be provided.

3.3 WASTE RECHARACTERIZATION

In the event that a significant change is suspected or detected in the waste stream, a provision for waste recharacterization will be implemented. A sampling/resampling of the wastestream will be performed and analyzed for all parameters specified in Section 2.1. This sample will be drawn from the primary sampling point as described in Section 2.3;

4 QUALITY ASSURANCE/QUALITY CONTROL

4.1 FIELD QA/QC

The following general procedures will be followed by sampling personnel.

4.1.1 EQUIPMENT BLANKS

Samples for this WAP are drawn from a free flowing spigot, therefore all sampling equipment and containers are dedicated. Equipment blanks will not be required.

4.1.2 TRIP BLANKS

A trip blank will be prepared by the laboratory using preserved containers (as applicable) and filled with reagent grade water. The trip blank will follow the sample containers to the site and through the entire collection and transportation process.

4.1.3 FIELD DUPLICATES

Field duplicates are representative samples taken at the same time of normal sampling using similar sampling techniques. The field duplicates are identified in a generic fashion to limit laboratory knowledge of the sample source. Field duplicates will be analyzed for all parameters. Field duplicates will be analyzed at a frequency equivalent to at least one (1) per calendar year. Additional field duplicates may be required to investigate specific parameters or analytical processes.

4.2 LABORATORY QA/QC

This section presents the general QA/QC requirements applicable to the analysis of environmental samples, as well as the methods for assessing data quality. The purpose of the QA/QC program is to produce data of known quality that is legally defensible, satisfies applicable data quality objectives (DQOs), and meet or exceed the requirements of the WAP.

Performance of all analytical methods is monitored to assess the accuracy and precision of the procedure. Specific quality control checks are designed to provide the necessary information for method assignment.

The following general elements apply to the chemical analyses performed in the laboratory. Note that a specified laboratory QA/QC program will be provided once a qualified laboratory is selected.

4.2.1 ELEMENTS OF QUALITY CONTROL - CHEMICAL

A preparation batch is a group of samples that are carried through an applicable preparation technique (e.g. digestion, distillation, or extraction) at the same time using the same reagents and conditions. An analytical batch is a batch of samples that are analyzed using the same instrument and conditions within the same time period. The identity of each batch is unambiguously recorded as a unique (Batch ID) so that a reviewer can identify the QC samples associated with a group of samples. The type of QC samples that may be utilized and their use are identified below. Specifics regarding the requirements of these QC samples are detailed in the individual standard operating procedures.

4.2.2 CALIBRATION

Instruments and support equipment are calibrated in accordance with the referenced analytical methods. Details of calibration procedures are contained in the laboratory SOPs. For the analyses selected, all target analytes are included in the initial and continuing calibrations regardless of their need in a given environmental sample.

If the calibration acceptance criteria are not met, the operating curve may be narrowed either by eliminating the low point or high point of the curve (providing all project criteria are still met.) For multi-analyte calibrations, specific analytes may be eliminated from the low or high points. Otherwise, the entire calibration curve is repeated. Elimination of any of the inner levels of the calibration in order to meet QC acceptance criteria is allowed provided that all analytes are eliminated in that level and the required minimum number of calibrated levels remain.

4.2.3 SURROGATES (SURR)

Surrogates are used to evaluate accuracy, method performance, and extraction efficiency in organic procedures. Surrogates shall be added to environmental samples, quality control samples, and blanks.

4.2.4 INITIAL CALIBRATION VERIFICATION (ICV)

A second source standard containing all target analytes is analyzed after each initial curve, to verify the validity of the calibration. This standard must be from a separate source or lot number from that used for calibration. Unless specified in the reference method, the ICV is at a concentration near the midpoint of the calibration range.

If the acceptance criteria are not met for the ICV, corrective action steps will include the following. When deemed appropriate, the analyst may take lesser corrective action.

- perform corrective action (e.g. prepare new standard, rinse system, etc.)
- analyze another calibration verification. If acceptance criteria are not met in this second consecutive (immediate) calibration verification, then perform one of the following. Either,
- demonstrate performance after corrective action with two consecutive successful calibration verifications, or
- a new initial instrument calibration must be performed.

The acceptance criteria must be met before samples can be analyzed. However, sample data associated with unacceptable calibration verification may be reported if the verification indicates high bias and the samples indicate non-detectable concentration, or if the project DQOs are met and an appropriate qualifier is reported.

4.2.5 INITIAL CALIBRATION BLANK (ICB)

A reagent blank is analyzed after the ICV and prior to the analysis of environmental samples. A blank may also be analyzed after high concentration samples to demonstrate that carryover contamination does not exist.

Samples associated with an ICB indicating high bias may be reported if the samples indicate non-detectable concentration, or if the project DQOs are met and an appropriate qualifier is reported.

4.2.6 INTERFERENCE CHECK SAMPLE (ICS)

Interference check samples are used in inductively coupled plasma analyses to verify background and inter-element correction factors. Samples associated with an ICS indicating high bias may be reported if the samples indicate non-detectable concentration, or if the project DQOs are met and an appropriate qualifier is reported.

4.2.7 METHOD BLANK (MB)

The method blank goes through all applicable preparation steps and is used to document non-contamination of the entire analytical process. The MB is considered a batch control parameter. Samples associated with a MB indicating high bias are re-prepared and analyzed. The only exceptions are samples that indicate a non-detectable concentration despite the MB result, or where the project DQOs are met and an appropriate qualifier is reported.

4.2.8 LABORATORY CONTROL SAMPLE (LCS)

The LCS is prepared with analyte-free water or, where available, a purchased solid matrix spiked with representative analytes. The LCS shall be spiked with a second source standard at a level near or below the midpoint of the calibration curve for each analyte. This QC sample shall be carried through the entire preparatory and analytical procedure to document the accuracy of the entire analytical process.

The LCS is considered a batch control parameter. Samples associated with a LCS that fails to meet the acceptance criteria for recovery are re-prepared and analyzed. The only exceptions are samples that indicate a non-detectable concentration when the LCS indicates high bias, or where the project DQOs are met and an appropriate qualifier is reported.

4.2.9 MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD)

A matrix spike and matrix spike duplicate are separate aliquots of sample spiked with known concentrations of analyte using a second source standard. The spiking occurs prior to sample preparation and analysis. Samples used for the MS/MSD are chosen at random. This allows for the evaluation of all sample matrices over time. The MS and MSD shall be spiked at a level less than or equal to the midpoint of the calibration curve.

The MS/MSD are matrix-specific quality control samples and are used to assess the bias for accuracy and precision of a method in a given sample matrix. The MS/MSD accuracy recovery is not solely used to assess batch control.

Samples having an indigenous concentration greater than or equal to 4 times the spiked amount are considered not applicable for spike analysis at that level. Where the sample chosen for MS/MSD analysis is one of a group of samples submitted from a site with homogeneous character and the MS/MSD require that the sample is re-prepared and analyzed, all samples from that Sample Delivery Group should be re-analyzed under similar conditions. If the acceptance criteria are not met in two separately prepared analyses, the failure is considered matrix specific for that sample and the results yielding better recovery are reported with an appropriate qualifier.

4.2.10 DUPLICATE (DUP)

Applicable to analyses where MS/MSD are not, duplicate samples are analyzed using identical recovery techniques and treated in an identical manner. Duplicate sample results are used to assess the precision of the entire analytical process. Samples used for the DUP are chosen at random. This allows for the evaluation of all sample matrices over time.

The DUP is a matrix-specific quality control sample and is used to assess the bias of a method due to a given sample matrix. The DUP is not used to solely assess batch control. If the acceptance criteria (%RPD) are not met, the sample and its duplicate must be re-prepared and analyzed. Relative Percent Difference is calculated only where the two values are greater than or equal to 5 times the PQL. If the values are below 5 times the PQL, the acceptance criteria are " 1 PQL of each other.

Where the sample chosen for duplicate analysis is one of a group of samples submitted from a site with homogeneous character and the DUP requires that the sample is re-prepared and analyzed, all samples from that Sample Delivery Group should be re-analyzed under similar conditions. If the acceptance criteria are not met in two separately prepared analyses, the failure is considered matrix specific for that sample and the results yielding better recovery are reported with an appropriate qualifier.

4.2.11 POST-DIGESTION SPIKES (PDS)

A PDS is applicable only to digested metals analyses and those general chemistry (wet chemistry) analyses that include a preparation step (e.g. cyanide, nitrogen - ammonia, and phenolics). A post-digestion spike may be analyzed to assist in the assessment of matrix interference when the MS and MSD fail to meet the accuracy acceptance criteria. In addition, a PDS can be used as a troubleshooting tool. The spiking solution is added to a sample aliquot just prior to analysis thereby evaluating the matrix effect on the analysis process only and not the preparation portion. Samples having an indigenous concentration greater than or equal to 4 times the spiked amount are considered not applicable for spike analysis at that level.

If the MS/MSD fail to meet the accuracy acceptance criteria and the PDS is within the acceptance criteria, matrix interference should be suspected. If the MS/MSD and PDS fail to meet the accuracy acceptance criteria, matrix interference is probable and the sample, MS/MSD, and PDS should be reprepared and analyzed. A smaller sample size should be considered as means to negate the apparent matrix interference.

4.2.12 SERIAL DILUTION (SD)

As a troubleshooting tool, it may be necessary to analyze a serial dilution of a sample. The results of a 1:5 serial dilution should agree with each other within 5% (unless stated otherwise in the reference method). These criteria are for evaluating the matrix effect in a new or unusual matrix and not for comparing results for a sample diluted because it was above the calibration range of the instrument.

4.2.13 CONTINUING CALIBRATION VERIFICATION (CCV)

A second source standard containing all target analytes is analyzed to verify that the calibration curve remains valid. This standard must be from a separate source or lot number from that used for calibration. Unless specified in the reference method, the ICV is at a concentration equivalent to the midpoint of the calibration range.

If the acceptance criteria are not met for the CCV corrective action steps include the following. When deemed appropriate, the analyst may take lesser corrective action.

- perform corrective action (e.g. prepare new standard, rinse system, etc.)
- analyze another calibration verification. If acceptance criteria are not met in this second consecutive (immediate) calibration verification, then perform one of the following. Either,
- demonstrate performance after corrective action with two consecutive successful calibration verifications, or
- a new initial instrument calibration must be performed.

Sample data associated with unacceptable calibration verification may be reported if the verification indicates high bias and the samples indicate non-detectable concentration, or if the project DQOs are met and an appropriate qualifier is reported.

4.2.14 CONTINUING CALIBRATION BLANK (CCB)

A reagent blank is analyzed after the CCV. A blank may also be analyzed after high concentration samples to demonstrate that carryover contamination does not exist.

Samples associated with a CCB indicating high bias may be reported if the samples indicate non-detectable concentration, or if the project DQOs are met and an appropriate qualifier is reported.

4.2.15 CONTROL CHARTS/TABULATIONS

Control chart-type data are retained by the laboratory for all quality control sample types. Where allowed by the reference method, laboratory generated acceptance limits may be statistically prepared for Surrogate recovery, LCS recovery, MS recovery for accuracy, and MSD/DUP recovery for precision. Statistical outliers are removed and a minimum of the 50 most recent data points is used to update the limits. When used, lab generated acceptance limits are updated on a minimum annual basis. Control limits are established at the average plus-and-minus three standard deviations ($\bar{X} \pm 3\sigma$) unless otherwise required in the reference method.

4.2.16 SUBSAMPLING

When removing a portion of an environmental sample, appropriate care and technique is used in order to obtain a representative sub-sample. For water samples this includes thoroughly shaking the sample container in order to mix any solids. It is appropriate to shake filtered groundwater samples as any particulate in the filtrate is from the original sample. For solid and semi-solid samples this includes stirring the sample in order to homogenize any stratified layers within the sample container. These techniques do not apply to removing an aliquot for the analysis of total organic halides (TOX), or total organic carbon (TOC).

4.2.17 SAMPLE CONTAINERS

Most containers are purchased certified clean from a commercial vendor. These containers are ready for use and require no additional monitoring prior to use. Containers that are purchased without certification will be verified clean prior to shipment.

4.3 CALIBRATION PROCEDURES - LABORATORY ANALYSES

All analytical calibration procedures utilized at the laboratory have been developed to meet or exceed the requirements specified in SW-846, (current) edition, and EPA 600/4-79/020. These procedures are strictly adhered to at all times.

4.3.1 ACCURACY AND TRACEABILITY OF CALIBRATION STANDARDS

All standards and reagents are tracked from their initial preparation through their use in the preparation and analytical batches. Standards purchased from an outside vendor are, where available, traceable to the National Institute of Standards Technology (NIST). A Certificate of Analysis, or similar document of traceability, is kept in the appropriate standards preparation log. Purchased standards may be used at their prepared and labeled concentration without further verification.

Standards preparation and reagent preparation logbooks are maintained throughout the laboratory. Each logbook is labeled with the laboratory name, unique name/purpose of the logbook, logbook number, the Astart date@ and the Aend date@.

Each stock standard, subsequent dilution, and prepared reagent is given a unique tracking number. When preparing dilutions of a standard the following information is included in the standards log:

- standard source lot number
- standard name
- expiration date
- initials of the preparer
- date prepared
- detailed information of the volume/mass used
- final volume prepared

- diluent
- prepared concentration

The expiration date of a prepared standard is that date on which the stock solution expires. In mixes where there is more than one expiration date for the stock solutions, the earliest date is chosen as the expiration date for the entire mix. Each container is labeled with standard or reagent name, concentration, tracking number, and the expiration date. Containers too small for a label with the required information are labeled with a minimum of the logbook reference number and expiration date. Expired standards are discarded and are not used for the generation of analytical data. Standards are prepared using glassware and delivering devices of known and acceptable accuracy.

4.4 DATA REDUCTION, REVIEW, REPORTING - FIELD ANALYSES

Data reduction for field analyses involves the direct recording of values from various meters and instruments. All results generated from field analyses consist of values read directly from continuous monitoring meters. Therefore, no calculations are required in producing the final reported results.

All field analysis raw data is reviewed by Buckeye personnel for accuracy and completeness. Particular attention is paid to the maximum and minimum values recorded, as these values are compared to permit limits for compliance purposes.

4.5 DATA REDUCTION, REVIEW, REPORTING - LABORATORY DATA

Data reduction involves the handling of raw sample data including, but not limited to, detector response, electrode potential readings, titrant volumes, and gravimetric measurements to achieve final sample concentrations. Automated systems are used for calculation and reduction wherever feasible.

4.5.1 DATA REVIEW

A two-tier technical review of all data is performed and documented.

1ST LEVEL TECHNICAL REVIEW

The laboratory technician performing an analysis reviews all of their own data and is responsible for ensuring that the calculations were properly performed and the quality control requirements were met. A data review checklist is initiated by the technician to document this review. The data review checklist is then given to a peer knowledgeable with the current requirements of that analytical procedure, a senior technician, unit supervisor, or the QA/QC director.

2ND LEVEL TECHNICAL REVIEW

A peer, senior technician, unit supervisor, or the QA/QC director reviews the data by repeating the verification performed by the laboratory technician. This step is documented through use of the data review checklist.

Acceptable data is then available for review in the laboratory data management system. This is performed through the AQA Validation[®] function of the database. Anyone able to perform the 1st Level or 2nd Level Technical review can Avalidate[®] the data in the database. This step approves the data for release.